

HW ✓

#8) $26 = -1 + (\overset{\textcircled{3}}{27}x)^{\overset{\textcircled{1}}{1} \cdot \overset{\textcircled{2}}{\frac{3}{4}}}$

$$\begin{array}{r} +1 \quad +1 \\ \hline 27^{\frac{1}{3}} = (27x)^{\frac{3}{4} \cdot \frac{4}{3}} \end{array}$$

$$\frac{81}{27} = \frac{27x}{27}$$

$$\textcircled{3 = x}$$

4) $7^{\frac{2}{1}} = r^{\frac{1}{2} \cdot \frac{2}{1}}$

$$\textcircled{49 = r}$$

On Separate paper, solve each of the following equations.

1. $3^{5-3x} = 81$

$$\begin{array}{r} 5-3x = 4 \\ -5 \quad -5 \\ \hline -3x = -1 \\ -3 \quad -3 \\ \hline x = \frac{1}{3} \end{array}$$

5. $8^{x-2} = \sqrt{8}$

$$x-2 = \frac{1}{2}$$

$$\begin{array}{r} x-2 = \frac{1}{2} \\ +2 \quad +2 \\ \hline \end{array}$$

$$x = \frac{5}{2}$$

2. $x^{\frac{4}{3}} - 16 = 0$

$$\begin{array}{r} +16 \quad +16 \\ \hline x^{\frac{4}{3}} = 16 \end{array}$$

$$x = 8$$

6. $3x^{\frac{5}{3}} + 96 = 0$

3. $4^{x+1} = \frac{1}{64}$

$$\begin{array}{r} x+1 = -3 \\ -1 \quad -1 \\ \hline -4 = x \end{array}$$

7. $\left(\frac{25}{4}\right)^x = \left(\frac{125}{8}\right)^{x+2}$

4. $4x^{\frac{2}{3}} - 5 = 11$

$$\begin{array}{r} +5 \quad +5 \\ \hline 4x^{\frac{2}{3}} = 16 \\ 4 \quad 4 \end{array}$$

$$x^{\frac{2}{3}} = 4^{\frac{3}{2}}$$

$$x = 8$$

8. $(x-3)^{\frac{2}{3}} = 9$

9. $2^{x^2+2} = 2^{3x}$

13. $5 + 7^{3x+2} = 6$

10. $\left(\frac{1}{3}\right)^{1-x} = 9^x$

14. $3(5x+1)^{\frac{3}{4}} + 1 = 25$

11. $2^{5-3x} = \frac{1}{16}$

15. $2x^{-\frac{3}{2}} - 4 = 12$

12. $5x^{\frac{2}{5}} - 3 = 17$